

Serial No.: 10/716,563
Docket No.: 102-1011
Amendment dated March 29, 2007
Reply to the Final Office Action of January 22, 2007

Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An image forming apparatus, comprising:
 - a photoconductive medium which is rotatable and is formed with a predetermined electrostatic latent image thereon;
 - a developing roller to attach a toner to develop the electrostatic latent image on the photoconductive medium;
 - a toner supplying roller to supply the toner stored in ~~the a~~ toner receptacle to the developing roller, wherein the toner supplying roller is formed in a fur brush shape; and
 - a cleaning unit disposed at a position opposite to ~~the a~~ predetermined nip with respect to a rotating axis of the toner supplying roller to remove from the toner supplying roller the toner which remains after the toner is transferred from the toner supplying roller to the developing roller,

wherein the nip defined between the developing roller and the toner supplying roller is approximately 0.2~0.5mm.
2. (Original) The image forming apparatus of claim 1, wherein the toner supplying roller is formed in a fur brush shape having a cylinder and a fur made of nylon or acryl and attached to the cylinder, and the cleaning unit is formed as a cleaning roller to be supported by the toner receptacle to be in pressing contact with the toner supplying roller with a predetermined pressure to form a predetermined second nip with the toner supplying roller.
3. (Original) The image forming apparatus of claim 2, wherein the fur is approximately 5~15 deniers thick and 1.0~1.5mm long.
4. (Original) The image forming apparatus of claim 2, wherein the cleaning roller is

formed of a strong bar of a cylindrical shape.

5. (Cancelled)

6. (Currently Amended) The image forming apparatus of claim 5₁, further comprising:

a toner controlling blade to form the toner supplied to the developing roller into a regularly thin film.

7. (Currently Amended) A developing unit used with an image forming apparatus having a photoconductive medium, comprising:

a toner receptacle to store a toner;

a developing roller to supply the toner to the photoconductive medium;

a toner supplying roller to supply the toner contained in the toner receptacle to the developing roller, wherein the toner supplying roller is formed in a fur brush shape; and

~~a cleaning roller to remove the toner from the toner supplying roller~~

wherein the toner supplying roller comprises a cylinder and a fur attached to a surface of the cylinder in a radial direction of the cylinder by a first distance from the surface of the cylinder; and

a cleaning roller is disposed to be spaced apart from the surface of the cylinder by a second distance to remove the toner from the toner supplying roller by shaking the fur of the cylinder.

8. (Previously Presented) The developing unit of claim 7, wherein the cleaning roller shakes off the toner remaining on a surface of the toner supplying roller.

9. (Previously Presented) The developing unit of claim 7, wherein the cleaning roller shakes a portion of the toner supplying roller.

10. (Previously Presented) The developing unit of claim 7, wherein the cleaning

roller is disposed in a direction parallel to a rotation axis of the toner supplying roller.

11. (Previously Presented) The developing unit of claim 7, wherein the toner supplying roller comprises fur disposed around an outer circumference thereof and the cleaning roller contacts a portion of the toner supplying roller to shake the portion of the toner supplying roller when the toner supplying roller rotates with respect to the cleaning roller, so that the toner attached to the fur of the toner supplying roller is removed.

12. (Previously Presented) The developing unit of claim 7, wherein the cleaning roller pushes a portion of the toner supplying roller with respect to the developing roller.

13. (Previously Presented) The developing unit of claim 7, wherein the cleaning roller pushes the toner supplying roller with respect to the toner receptacle.

14. (Previously Presented) The developing unit of claim 7, wherein the toner supplying roller comprises a cylinder and a fur attached to the cylinder, and the cleaning roller is disposed to contact the fur of the toner supplying roller and shakes the fur of the toner supplying roller when the toner supplying roller rotates.

15. (Cancelled)

16. (Currently Amended) The developing unit of claim ~~15~~7, wherein the second distance is equal to or less than the first distance.

17. (Previously Presented) The developing unit of claim 16, wherein the cleaning roller comprises a cylindrical member having an outer surface disposed to contact the fur of the toner supplying roller.

18. (Original) The developing unit of claim 17, wherein the outer surface of the cylindrical member is spaced-apart from the surface of the cylinder by a third distance which is

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equal to or less than the first distance.

19. (Previously Presented) The developing unit of claim 17, wherein the cleaning roller is disposed to contact the fur of the toner supplying roller and shakes the fur when the toner supplying roller rotates, so that the toner attached to the fur is removed.

20. (Previously Presented) The developing unit of claim 17, wherein the cleaning roller is stationary, and the fur of the toner supplying roller contacts the cleaning roller while rotating together with the cylinder of the toner supplying roller.

21. (Currently Amended) The developing unit of claim 7A developing unit used with an image forming apparatus having a photoconductive medium, comprising:

a toner receptacle to store a toner;

a developing roller to supply the toner to the photoconductive medium;

a toner supplying roller to supply the toner contained in the toner receptacle to the developing roller, wherein the toner supplying roller is formed in a fur brush shape; and

a cleaning roller to remove the toner from the toner supplying roller,

wherein the toner supplying roller is rotatable, and the cleaning roller is stationary.

22. (Previously Presented) The developing unit of claim 7, wherein the cleaning roller is disposed to contact the toner remaining on a surface of the toner supplying roller.

23. (Previously Presented) An image forming apparatus comprising:
a photoconductive medium; and
a developing unit comprising,
a toner receptacle to store a toner,
a developing roller to supply the toner to the photoconductive medium,
a toner supplying roller having fur disposed around a circumference thereof to supply the toner contained in the toner receptacle to the developing roller, wherein the toner supplying roller is formed in a fur brush shape, and

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a cleaning unit to shake the fur of the toner supplying roller to remove the toner from the toner supplying roller.

24. (Currently Amended) A method used with a developing unit of an image forming apparatus having a photoconductive medium, the method comprising:

supplying toner stored in a toner receptacle of the developing unit to a developing roller by using a toner supplying roller having fur disposed around a circumference thereof disposed within the developing unit, wherein the toner supplying roller is formed in a fur brush shape; and

removing residual toner remaining on the toner supplying roller with a cleaning roller by shaking the fur of the toner supplying roller after the toner supplying operation.

25. (Currently Amended) A method used with an image forming apparatus, the method comprising:

transferring toner from a toner receptacle of a developing unit to a developing roller with a toner supplying roller having fur disposed around a circumference thereof to develop a toner image on a photoconductive medium, wherein the toner supplying roller is formed in a fur brush shape; and

removing the toner remaining on a toner supplying roller with a cleaning roller by shaking the fur of the toner supplying roller.

26. (Previously Presented) The image forming apparatus of claim 1, further comprising:

a developing unit frame to support the developing roller to be rotatable, and having a toner receptacle to store the toner.

27. (Previously Presented) The image forming apparatus of claim 1, wherein the developing roller is rotatably mounted in the image forming apparatus to contact the photoconductive medium.

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28. (Previously Presented) The image forming apparatus of claim 1, wherein the toner supplying roller rotates in contact with the developing roller to form a predetermined nip with the developing roller.